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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,728

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Kenichiro Nakamura

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EXAMINER

PATEL, RITA RAMESH

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,728	Applicant(s) NAKAMURA ET AL.	
	Examiner RITA R. PATEL	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/30/08; 12/3/08</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Applicant's Arguments / Amendments

This Office Action is responsive to the amendment filed on 10/7/08. Claims 1-4 are pending. Claims 2-4 have been amended. Applicant's arguments have fully been considered and are persuasive, therefore the former 35 USC 102 rejection has been overcome. However, upon further search and consideration, the instant claims are rejected under new grounds of rejections and thus claims 1-4 are rejected for the reasons of record.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 4 recite the limitation "the rotary motor" in lines 5. There is insufficient antecedent basis for this limitation in the claim.

Is the claimed rotary motor in reference to the "servomotor"? Are these the same? Since the servomotor applies a torque, it seems to be analogous with a "rotary motor". For the purposes of examination, the servomotor and the rotary motor will be considered to be the same components.

Claim Objections

Claim 2 is objected to because of the following informalities: it appears in line 2 of claim 2, it should read “the servometer applies the torque corresponding to a difference between the weight of”. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lammert et al. herein referred to as “Lammert” (Pub. No.: US 200/0170579) and further in view of Birang et al. herein referred to as “Birang” (Pub. No. US 2004/0072500).

Lammert teaches a spray cleaning apparatus for semiconductor wafers comprising at least a fluid nozzle 3 (treating tool), bracket 49 (operating shaft), bracket 50 (bracket), bracket 17 (attaching frame).

Lammert teaches the claimed invention except fails to teach a servometer coupled to the operating shaft, such that the servometer applies a torque to contact pressure between the treating tool and the substrate. Lammert merely teaches using a servo-motor driven belt type system (see Figure 11) for movement of the spray cleaning apparatus in the x -axis direction. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a servomotor for applying a

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torque to the cleaning apparatus, as taught by Birang's disclosure of a chemical mechanical polishing apparatus having a carrier head 34 to press a substrate against a polishing surface with a controllable pressure from pressure source 38. The pressure source 38 is coupled to a controller 40 for adjusting pressure of the carrier head on the substrate, to create a constant polishing rate. It is beneficial to have these features in the Lammert invention, since it provides increased control of the cleaning head, as well as efficient cleaning without damaging or over-working/scratching the delicate surface of the substrate. It is known in the art of substrate cleaning/polishing devices to provide a torque-driven pressure which is adjustable; adjusting the cleaning head is important since the cleaning head will inevitably wear down over time and thus require an increase in pressure to perform the equivalent cleaning/polishing functions.

Although the Lammert invention fails to go into specific regarding the connection details of the servomotor to the apparatus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use known fastening means in the mechanical art for connecting the motor to the apparatus. Namely a pin joint is a known fastening means commonly used to connect two parts; this would have been an obvious choice to one of ordinary skill in the art for attaching the servomotor to the device.

Moreover, a servomotor reads on claims for a rotary motor since the servomotor as taught by Lammert produces a torsion, which reads on claims for a rotary action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Sato et al. (Patent No. 6,520,835) teaches a polishing system for a wafer surface having a polishing page and a servomotor.

Kramer et al. (Patent No. 7,150,675) teaches a method and system for controlling the chemical mechanical polishing by using a sensor signal of a pad conditioner.

Matsuda et al. (Patent No. 6,092,542) teaches a cleaning apparatus for a substrate having a swing arm, and servometer for moving the arm in an x-axis only.

Kobayashi et al. (Patent No. 7,214,124) teaches an equipment and method for polishing both sides of a rectangular substrate.

Gotkis et al. (Pub. No. US 2004/0011462) teaches a method and apparatus for applying differential removal rates to a surface of a substrate.

Sakurai et al. (Pub. No. US 2004/0121704) teaches a vertically adjustable chemical mechanical polishing head having a pivot mechanism and servomotor attached thereto.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RITA R. PATEL whose telephone number is (571)272-8701. The examiner can normally be reached on M-F: 9-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art
Unit 1792

/Rita R. Patel/
Examiner, Art Unit 1792